



Organized Thematic Session:

ST38: Coupling and parallel problems / Problemas acoplados y/o de paralelización

In the present days, numerical methods play an important role in obtaining solutions to complex engineering problems in due time. Some topics of interest (nonexclusive) to the present thematic session are the development of numerical methods to multi-physics and multidisciplinary problems; the coupling of different solution strategies; the joint use of different mathematical formulations and numerical methods, while maximizing individual advantages of each technique; and the application of these concepts to challenging science and engineering problems.

These last years revealed that one can no longer expect more performance from computers by a continuous increase of the CPU clock rate. Instead, in the last six years the CPUs that have been produced have an essentially constant CPU speed but an increasing number of cores. So increasing the performance of engineering codes and also attacking more complex problems requires that the codes have to be parallel and scale to more and more processors. Thus there is an increasing interest by the engineering community in parallel processing, either by parallelizing older codes or designing parallel codes from scratch.

The main purpose of this thematic session is to present and discuss up-to-date methodologies and engineering applications involving coupling problems and parallel techniques.

Session Organizers (in alphabetical order):

Guillaume Houzeaux (Barcelona Supercomputing Center - BSC-CNS)

Paulo Amado-Mendes & Pedro Vieira Alberto (Universidade de Coimbra, Portugal)